THE VETERINARY RECORD

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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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Sir Rubert Boyce, M.B., F.R.S.

All who have followed the veterinary development of the last decade will share our regret at the death of Sir Rubert Boyce. An indefatigable worker who literally died in harness, Sir Rubert will be long remembered in connection with the University of which he was one of the guiding spirits, and the cause of tropical medicine, for which he did so much. He will be remembered also in veterinary circles as one who held a high ideal of the possibilities of veterinary science, and who constantly endeavoured to facilitate its extension, and to induce veterinary surgeons to avail themselves of the opening opportunities for higher and more specialised professional training. "Make yourselves efficient" was the keynote of his advice to a profession whose potential utility he saw clearly, and whose present utility owes not a little to his assistance. We wish there were more prominent pathologists so appreciative of veterinary claims and so sympathetic towards veterinary endeavour as was Sir Rubert Boyce.

THE VETERINARY SURGEONS' AMENDMENT BILL.

Our Bill was down for second reading on Friday of last week. On that day the House of Commons was sparsely attended, and indeed narrowly escaped being counted out before any business was done. The members only sat for a short time, and ours was not among the few Bills dealt with. We suppose that this was the last chance that the Bill will have in the present overcrowded session, and we can only hope that it may meet better fortune on its presentation next session.

VETERINARY CORONATION HONOURS.

The veterinary profession does not figure too prominently in the list of Coronation Honours, but we are glad to congratulate the veteran Col. Duck upon rising from C.B. to K.C.B., and Col. C. Rutherford upon attaining his C.B. The present P.V.S. to the Indian Army and the old Director-General have each of them well earned the distinctions. The honour to Col. Duck is especially gratifying, for it is now nearly nine years since he retired, and it is pleasant to know that the value of his work is still remembered.

THE LIMITS OF DIAGNOSIS.

Mr. Wallis Hoare's article on the above subject will appeal to professional men, but surely he will allow that, until the general public are educated up to the level of the veterinary profession on animal matters, it would be suicidal, and only playing into the hands of the motor opposition to disclose frankly all our fallibilities to them, or to discuss all the pros and cons of a case with men who know nothing about the works inside the exterior, and very little about the outside itself. If a prolonged examination of the case led to a confession of ignorance, how should the client appreciate the making of the deductions that led up to the formation of the opinion, and what would his action be? He might turn round and say "what is the good of all your extreme care if you get no further than a man who never looked at my case?" I am not at all at one with Mr. Hoare when he uses the phrase "the body is consigned to the knacker, where all the secrets of errors in diagnosis are concealed as in the cave of oblivion." This is the place, to my mind, where errors of diagnosis are brought to light, and it is the place, if there is any, where the owner of the animal thinks he can best detect the real state of things, and often question the veterinary surgeon's wisdom.

I am rather surprised that such a well-known writer on therapeutics should state that "the fact remains that in the large majority of cases the treatment adopted has little effect on the results." Personally, I shall never believe this argument until I see and know of cases habitually recovering although no treatment whatever has been adopted. All the evidence is the other way, and it is a good job for us that most men who own horses and stock know it. I have heard the non-treatment argument frequently advanced, and the action of therapeutics pooh-poohed, but I never yet met a veterinary surgeon who had the courage of his uttered convictions in the matter, and not many stockowners either. The statement is further away than many of those made in lectures and text-books.

As regards the ailments of horses' teeth, I agree that many times there is some defect there, but on the other hand, I wonder how many times horses teeth are rasped when the stomach is at fault, and of all operations we do I think there is more bunkum about this one than any other.

The diagnosis of lameness needs great care and observation and a good knowledge of anatomy, and I have got on well enough up to now without cocaine, in fact it has been a failure with me, and

although a hypodermic needle can be easily used about the neck and body, I have found above one horse that would send you and your hypodermic syringe to kingdom come if you tried to use it below his knees or hocks.

Navicular disease ought never to be diagnosed by the lightning method, and no wise man will ever attempt to do it. To my mind, the assurance of the young practitioner is a matter of the personal equation. Now-a-days he is more modest than he used to be, and the philosophical vein of thought gets ingrained early. "The thoughtful man," to my mind, is of far more value than either "the smart man" or the man like a young Adonis, who is so frequently the subject of advertisement.

G. MAYALL.

ACETOZONE IN JOINT EVIL.

There may be nothing new in the following rough notes. I just place them on record so that any members of the profession may follow the matter up, and perhaps give us the result of their experience.

This season has presented a good few cases of the above disease, and the following is the treatment which I have adopted with marked success.

Case 1. Clydesdale foal, 10 days old; when seen, very much swollen on near hip, slightly lame, open navel. Injected into swelling with a long subcutaneous needle, which I have made for the purpose, four syringe-fulls of 1 in 500 Acetozone (Parke, Davis, and Co.) at different parts of the swelling, and left a bottle of above strength with directions that a table spoonfull was to be given every five hours in four tablespoonfulls of mare's milk.

Next day swelling in hip gone, but off hock enlarged, hot, and painful on pressure. Injected two syringefulls into tissues of hock, and continued Acetozone internally.

Third day swelling all subsided, foal playful, made a good recovery.

Case 2. Blood foal, 15 days old, foaled in field. Found shoulder, fore fetlocks and near stifle much swollen: foal unable to get up, and very indifferent about sucking.

Adopted treatment as in Case 1, both external and internal. In two days foal gets up without assistance, sucks well, but is lame, and swollen on one hock. Injected hock. Next day hock burst. Injected into opening solution 1 in 300 Acetozone with self-filling syringe.

In two days wound in hock closed, foal bright, sucks well. This made a slow recovery, but is now sound and well.

Case 3. Foal, out of a Fell pony, about three weeks old, had been treated from *Farmer and Stock Breeder*.

Foal unable to rise, extensive suppuration of one fore arm, with partial sloughing, both hind fetlocks swollen. Injected fetlock and wounds as in Case 2. As the animal was unable to rise or stand it was fed with mother's milk. This foal to-day can stand and walk, although very stiff, and all swelling subsiding; wound healthy with little discharge. The foal presents all the appearance of making a recovery which may, I think, be phenomenal.

I use a 60 m hypodermic syringe with specially made strong needle. I may say that I have also used Acetozone with marked results in cases of general sepsis and of mammitis, when it is injected into the teats with a special syringe.

I have no interest in Messrs. P. D. and Co. They kindly placed a quantity of Acetozone at my disposal with *carte blanche* to report either way.

R. M. MALLOCH, M.R.C.V.S.

Kirkby Stephen.

ANÆMIA, PARASITIC DIARRHŒA IN SHEEP AND DEER.

If he is reported correctly in *The Times*, John Harley, M.D., LOND., probably arrived at a wrong conclusion as to the cause of the anæmia from which his ewes died. I presume death from syncope would not well fit in.

Losses amongst ewes in this neighbourhood from worms in the abomasum have been severe this year, and the number of these worms in some ewes must be counted by the million instead of the thousand. They are about an inch long, and when swimming about their colour gives them a spiral appearance.

Is it a coincidence, or is there a connection between the two, that on the same farms last year in the spring losses were heavy with the lambs from stomach worms, which were very small, about ½in. long. I refer here to Hampshire Down sheep. Last year in the autumn 180 out of 220 cross-bred grass fed lambs died on one farm from a similar cause.

Parasitic diarrhœa in young cattle is also a common occurrence in the neighbourhood. The same disease this spring has carried the deer off wholesale, both fallow and red deer

I should be grateful to learn of a specific remedy for the disease in each of the above animals.

I have a suspicion the succession of mild winters has something to do with the increased prevalence of the disease.

WM. T. D. BROAD, M.R.C.V.S.

Marlborough.

ABSTRACTS FROM FOREIGN JOURNALS.

QUARTER-ILL IN THE HORSE.

H. Levens, of Goch, believes that quarter-ill in horses is much commoner than is supposed, in quarter-ill districts at least. He records the following case in a well built mare, in good condition, of six or seven years old.

This mare had been upon the pasture the whole of the previous day. Brought into the stable at night she had then eaten well. On the morning of the day of the illness she had been put into harness, and half an hour later had suddenly fallen lame

upon one hind limb, dragging the foot, and also showing colicky symptoms. She was taken back to the stable, a journey of about ten minutes' duration, during which she fell three times. Arrived at the stable she immediately again fell, and did not rise afterwards.

Levens was called, and found the mare lying on her side, copiously covered with sweat. She was making vain attempts to rise, which, despite assistance, did not succeed. Both hind feet seemed completely paralysed. She was throwing her head about violently, and disturbing the straw with her fore feet; and so far, as Levens remarks, the symptoms seemed typical of azoturia. On the left side of the croup, however, was a swelling the size of a plate, which crackled when the hand was drawn over it, and the animal showed great pain from the lightest pressure upon this place. Swellings of a more circumscribed kind were also present upon the head. The eyes were staring, and the conjunctiva was dark-red with an inclination to bluish. The respirations were quickened (counting 50 to 60 per minute) and groaning. The pulse, which counted 80 per minute, was weak and scarcely perceptible. The great restlessness of the animal precluded an examination of the heart. The rectal temperature was 106·1 F. Peristalsis was very violent, the peristaltic sounds being audible without applying the ear to the abdomen.

From the high temperature and the peculiar swellings Levens suspected black-quarter rather than azoturia. Therapeutically, he gave first a hypodermic injection of morphia, and somewhat later another of iodipin, and at the same time prescribed some local applications to the swellings.

Six hours later the mare had become quieter, but appeared very feeble. The swellings had become more extensive, and pressure upon them caused movements of the fore extremities with violent groaning. The pulse and respirations were unaltered, but the temperature had fallen to 104 F. A second injection of iodipin was given, but two hours later the horse was dead.

The post-mortem examination, which was made 22 hours after death, gave the following results. The whole carcase was greatly swollen, though the weather was cold. The swellings which had been seen during life were much more extensive than could then be suspected. The distensions of the skin extended over the back, neck, and lips; and were caused by an unusually well-marked sanguineous infiltration of the subcutaneous connective tissue. When the skin was incised, in addition to this sanguineous infiltration, gases escaped which possessed a peculiar odour scarcely ever observed in horses. The muscles of the croup on the left side of the body, and partially also upon the right side, were dark-red—almost black-red—in colour; they were rich in juices and gases, and their consistence was loose and friable. The blood obtained from the muscles and by incision of the larger bloodvessels was tar-like and viscous. The muscles of the head and neck showed similar black-red spongy alterations. The muscles of the fore-limbs, on the other hand, even on the right side, upon which the animal had laid and had died, were of a remarkably clear red colour, with merely a tinge of yellowish. Levens regarded this as local anæmia.

Except some subperitoneal hæmorrhages and an insignificant quantity of bloody exudate, nothing particularly abnormal could be found in the abdominal cavity. The spleen appeared somewhat enlarged to Levens' eye; but the spleen-pulp was only slighly softened and, apart from being dark in colour, was not materially altered.

The thoracic cavity, also, showed no peculiar pathological lesions. The lungs were very rich in blood. Some hæmorrhagic spots appeared under the epicardium; the cardiac muscle appeared very friable, and the chambers of the heart were empty. The sole result of the naked eye post-mortem examination, therefore, was to confirm the opinion which Levens had formed during life of the probability of black-quarter.

Levens also made microscopic preparations from the sanguineons infiltrations of the head, and examined them after staining with gentian violet solution. In every preparation he found more or less numerous spore-bearing bacilli resembling those of black-quarter. As a further confirmation of his diagnosis, he instituted inoculation experiments; but, not having guinea-pigs at hand, used rabbits alone. The inoculated rabbits remained healthy.

Taking all things into consideration, Levens regards it as certain that this mare died from typical blackquarter.—*Berliner Tier. Woch.*

[There are a few cases of quarter-ill in the horse upon record; and recently a statement of the occurrence of the disease in horses in a quarter-ill district has caused some little stir in German official veterinary circles.

The present case would perhaps have been more conclusively established had the author been able to inoculate guinea-pigs in addition to rabbits—the guinea-pig being susceptible to quarter-ill, while the rabbit is refractory. Nevertheless, it is a noteworthy contribution to a controversial question, for I suppose not a few veterinary surgeons are sceptical regarding the occurrence of equine quarter-ill.—TRANS.]

ANEURISM IN THE CAROTID IN THE DOG.

Cadéac says (*Journal de Méd. Vét. et de Zoot.*) that aneurism of the carotid artery sometimes acquires considerable dimensions in the dog, without giving cause for its existence to be suspected. He notes a case in a Newfoundland dog, which was suffering from an abscess of the buttock and died suddenly while this was being opened, and which was found post-mortem to be affected with a carotid aneurism of a size surpassing that of a large walnut. The aneurismal cavity was almost entirely obliterated by old degenerated clots. The arterial wall was thickened and calcified in places and similar centres of calcification were disseminated on the course of the aorta, principally in the neighbourhood of the sigmoid valves. The heart itself showed numerous centres of degeneration, which explained its arrest during the operation of opening the abscess.—(*Annales de Méd. Vét.*)

Necrosis of the Spleen in the Pig.

Necrosis of the parenchyma of the spleen is an accident which, according to Cadéac, is not very rare. This author describes (*Journal de Méd. Vét. et de Zootechnie*) a case he observed in a one-year-old pig, which was killed at the slaughterhouse when fat and in good condition. Post-mortem, the spleen was found to be represented by a globular fibrous whitish mass the size of a man's head, indistinctly fluctuating, and covered with considerably thickened splenic capsule. Incision of this gave exit to a blackish fluid and to a floating body, the latter being a splenic parenchyma. This organ was entirely disincapsulated and had undergone granulo-fatty degeneration; all the stages of this degeneration being demonstrable in its tissue.

This transformation doubtless resulted from torsion of the spleen about the gastro-splenic ligament, which various causes (such as violent movements of the body, or pressure of a neighbouring organ) might have brought about. The circulation of the blood soon became hindered or suppressed; the spleen necrosed; and the parenchyma became free in its capsule, the latter remaining covered and nourished by the peritoneum.—*Annales de Méd. Vét.*

W. R. C.

NILE EXPEDITION 1884-5.

(*Continued from p.* 792.)

Veterinary Report on the River Column.

From Veterinary Surgeon, 1st Class, A. E. Queripel to the Principal Veterinary Surgeon.

Korti, 16th March, 1885.

Sir,—On completion of the operations of the River Column, Nile Expeditionary Force, of which I held sole veterinary charge, I have the honour to submit the following report for your information:—

On 21st January, I marched from Korti with the Headquarters and left division of No. 11 Company, Commissariat and Transport Staff, and joined Headquarters of the River Column on 23rd January, on which date I was placed in orders as Veterinary Surgeon of the whole Column. The operations continued until 7th March.

The animals attached to this column were as follows:

Horses.			
19th Hussars	...	100	
Infantry chargers	...	25	
General Staff and orderlies	...	20	
			— 145
Camels.			
No. 11 Company, Commissariat and Transport Corps	...	350	
Egyptian Camel Corps	...	130	
Egyptian Artillery	...	100	
General Staff, etc.,	...	20	
			— 600
Total number of animals			745

The marches, as a rule, were not long, although some were trying, owing to the fact that animals had to be kept loaded for a lengthened period.

Some difficulty was experienced with reference to grain, but I must add that every attention and care was bestowed on the animals by the officers commanding the various corps. General Earle was fully alive to the necessity of keeping the animals in good condition, and on 28th January published the following order:—

"Commanding Officers of all corps are to give fullest assistance to Senior Commissariat Officer in collection of grain and dhourra stalk. It is as necessary to the success of the Expedition that the Cavalry horses and camels should be well fed as that the troops should be."

No opportunity was lost in obtaining forage, and to this fact do I attribute mainly the good condition in which the animals of this column returned to Korti.

As I above stated, some difficulty was experienced about grain. This arose mainly owing to the necessity of keeping at least 20 days' supply in hand for the horses, as the amount obtainable in advance was quite uncertain. Owing to this fact, it was decided that grain should not be issued regularly to the camels. The average issue during the operations for these animals was one feed per week of 6lb. Large quantities of green wheat, barley, and lubia, also of dhourra stalk, were obtained, and the issue of grain took place after any especially hard day's work. The camels did well on this food. Some of the weakly ones fell away in condition, and some few died; but, on the whole, the experiment went far to confirm me in my opinion that camels will do well without grain, if they obtain a good quantity of fodder.

A good supply of water was always at hand, and camels were watered every day. I would here record my opinion that, whenever practicable, camels should be given the option of water, to drink or not, as they please. It is, I feel certain, a great mistake to water these animals only once every second or third day. Granted that they will go for this period without water, still it does not follow that they will not suffer if not regularly watered.

The low rate of mortality in the Camel Corps I attribute to the fact that these animals were in splendid condition at starting. They were better bred animals than those of either the Artillery or Transport Corps; and again, and I may say mainly, is this attributable to the fact that every camel has a man to look after him; and, further, this man is fully aware that his life may depend, when scouting, on the condition of his camel. The condition of these animals at the end of the operations was very creditable to the men and officers of the Corps.

The Egyptian Artillery head the list in the high rate of mortality; this I attribute to the fact that all their camels were from the Delta, and unaccustomed to the extreme cold of the Soudan, and to the food obtainable. It must not, however, be thought that I am advocating such camels not being employed in the Soudan. Far from it. I consider that, taken as a whole, they did remarkably good work. Their condition, at the end of the operations, was most creditable.

I look upon the percentage of deaths in No. 11 Company as reflecting great credit on the officers in charge. Had it not been for the constant care and supervision exercised, it would have been much higher; and I would be failing in my duty did I not place on record the assistance I always received from Captain Lea, Commanding this company. Always only too ready to carry out any suggestions made, he was ever on the alert to further the well-being of the camels under his command. As I have already stated, many of these camels were enfeebled by hard work, many were very underbred, whilst three-year-olds, and those of extreme old age were to be found. All these causes tended to raise the percentage. Had it not been for the losses sustained whilst crossing the Nile, by swimming them, and to which I shall hereafter allude, the percentage of casualties would have been but 5·8.

I would now allude to the crossing of the Nile by swimming a large body of animals over. This occurred

twice, and as forming a novel feature in warfare (as far as camels are concerned), I herewith submit copy of a report submitted to Gen. Brackenbury when the first crossing took place.

I regret to say that the second crossing was not so successful. During the first half hour 10 camels reached the left bank dead, and many others arrived in a very exhausted condition. This loss, in my opinion, was due to the fact that a half-hitch was placed round the nostrils. Feeling that, if this practice were continued, the loss would be enormous, I immediately reported the matter to the General Officer Commanding; it was at once stopped, the result being that no more deaths occurred that day. Three more camels were drowned on the second day; this, however, was due to the fact that half a gale of wind was blowing.

During both crossings 47 animals arrived in a very exhausted condition; many of these were reported by the boatmen to be dead, but restoratives being immediately administered, they all recovered.

I would now offer a few remarks on "Disease," and can only express regret that I have but little of importance to say under this heading. Many of by far the most interesting cases had to be abandoned on the line of march, and much information that could have been learned by post-mortem examination was lost, as time would not permit of such examinations being made.

Debility and exhaustion, as will be seen by reference to the annexed return, were the causes to which the greatest mortality was due. Although the numerical strength of No. 11 Company was thereby reduced, still the working power of the company did not suffer thereby, as nearly all the animals that succumbed were such as may truly be said never to have done a day's work. These comprised mainly very young or very old animals. And here I would remark that but little discrimination was shown in the camels bought; very many that came under my observation were two and three years of age, and naturally were unfit for work. I am pleased to find, by instructions issued to officers now proceeding to purchase camels for the autumnal campaign, that all such are to be immediately rejected if brought up for sale.

Diseases of air-passages and lungs.—But few cases occurred in this class, and this I mainly attribute to the fact that the saddles were kept on at night. The variations in temperature were very great, ranging from 39°F. minimum to 92°F. maximum. With this great variation many more cases would have occurred had it not been for the care taken of obtaining shelter when practicable.

On arrival at Wady Halfa last December I wrote very strongly, advising the Director of Transport to furnish every camel with a stout blanket. The General Commanding Lines of Communication would not, however, sanction them being supplied. I trust, however, that this will be done in future, as in addition to saving a number of lives, a large number of saddle galls would also be avoided, as the blanket could be folded under the saddle. Besides which, should an animal be galled, the blanket could be doubled up so as to form a pad, thereby taking weight off the injured part.

Diseases of the brain.—Camels exposed to either heat or intense cold are very subject to cephalic derangement. The natives of India are fully alive to these facts, and are therefore very careful to provide clothing and shelter for their animals, as well as not to march them in the great heat of the day. It is mainly in this class that I regret having been unable to make any post-mortem examinations. I would especially liked to have done so in those cases recorded as megrims, for this I feel is a misnomer, but being ignorant of the pathology of the disease, I recorded it as such at the time. For a history of these cases, I would refer to annexed report marked B.

Under the heading "Abscess, Head," is also included a disease peculiar to camels, and one which is comparatively rare. I have seen it in India, and I am told it prevails also in Egypt. Only one case has as yet come under my notice. By recording it as I have done, I feel I have only described a symptom of the disease. It first shows itself as an ordinary attack of fever would, but in a very short time it is evident that the febrile disturbance is due to some latent cause. In a short time a tumour forms on the head; this gradually enlarges, and very suddenly the animal dies. In one case which I well remember, absorption of the bone had taken place, and the animal died of encephalitis. The case now recorded showed all these symptoms, but having to be abandoned on the line of march, no post-mortem examination could be made.

Wounds and other injuries. The number of cases admitted under saddlery galls only call for comment. It must not. however, be imagined that these originated during the operations of the River Column. When No. 11 Company marched from Sarrass, there were, according to a certificate given by Veterinary Surgeon Griffiths, 130 cases of saddlery galls. In addition to these, a large number were received at Korti amongst 75 animals received at that station, to augment the strength of the Company. Had it been possible to throw these animals out of work for some time, no doubt a radical cure might have been made in most cases; as it was, however, every animal had to be loaded. And here I would remark that it it is quite possible to work camels with what may truly be said to be frightful sores—not that I am advocating cruelty—but by this I mean that it is possible to alter the saddles so, that not only do they not touch the injured parts, but also that the wounds will heal well even when the animal is at work. In fact, I go farther, and say that all the cases that came under my observation healed more rapidly at work than when they were lying idle. During the seven days we halted at Berti, the wounds assumed a very unhealthy action, and would not granulate. To work animals with sore backs it is, however, necessary to have perfectly-fitting saddles, and this cannot be ensured except in an organised company. In No. 11 Company, after a hard day's work, reaching to 30 miles, with heavy loads, I have gone round every animal, and have assured myself that not a single wound has been touched. I would make an exception to wither galls. Whenever practicable I made all such cases go spare, as I found great difficulty in preventing injury being done. This leads me to make a few remarks on the saddles. The stuffing was in many cases infamous. Frequently have I seen pieces of stick, nails, pieces of raw hide, that cut like a knife, removed from the stuffing; these were the most prolific causes of saddlery galls. The panels are by far too deep and too long; to this do I attribute most of the cases that occurred on the transverse lumbar processes and on the hips. The tree should be solid, at least in part; as arranged at present, wither galls are always occurring. The breast-strap might be dispensed with; not that it would not be advantageous if properly adjusted, but all natives are likely to tie it down too tightly, the result being that the saddle is brought right down on the withers.

Skin diseases. Scabies was very prevalent in the whole force, except in the Egyptian Camel Corps; and although only 25 cases are shown in annexed return, this must be looked upon as only the very severe cases, for every animal in the force was more or less affected.

When I first assumed veterinary charge of No. 11 Company, I found that 79 cases existed. These were immediately segregated, and were worked on the march as one section, the result being that on reaching Korti the disease was dying out. At Korti, however, we received a number of fresh cases, and, owing to the exigencies of warfare, the camel lines were always as compact as possible ; the result of this was that the disease rapidly spread. As above stated, the Egyptian Camel Corps suffered but little. This I attribute to the fact that they had all their camels clipped in September, when they were all covered over with the native remedy of ghee—sulphur and salt ; and, again, every camel had its own man to look after it, and therefore was properly groomed.

All my remarks have hitherto been confined to camels. I must now offer a few observations on the horses of the 19th Hussars which accompanied this column. Mounted on Syrian ponies, averaging 14 hands, it was marvellous to see the work performed by this squadron. These horses were mainly light, looking certainly not more than up to 10 stone, yet day after day did they carry 18 stone from sunrise to sunset, would come in and feed heartily, and be fit for work next day. By the arrangement made of not giving grain to the camels, these horses received grain every day, besides a large amount of green and dry fodder. Only two casualties occurred—one died from exhaustion, and one was destroyed for fracture of the tibia. The shoeing of this squadron was, however, a matter of great anxiety to me. They left Korti with only six shoes and 200 nails per troop. At Handab 17 sets of shoes and 175 nails were received. The result of this was that in a short time not a nail was left, and these horses had to travel frequently at the gallop over solid rock. The result was a number of cases of contusion of the feet ; but still most of them continued to work.

(To be continued).

CENTRAL VETERINARY SOCIETY.

An ordinary general meeting was held at 10 Red Lion Square, on Thursday, June 1st, Mr. W. S. Mulvey, President, in the chair. The following Fellows signed the attendance book : Messrs. T. S. Price, E. Lionel Stroud, Ralph Bennett, R. C. Irving, James Rowe, D. Stewart Wm. Hunting, F. G. Samson, A. L. Wilson, R. A. Philp, J. A. Gosling, Prof. G. H. Wooldridge, R. Eaglesham, F. H. Sanderson, C. Herbert Sheather, Ainsworth Wilson, C. E. Wells, Charles Roberts, G. H. Livesey, R. Bryden, J. W. McIntosh, W. Perryman, W. R. Davis, R. J. Foreman, W. R. Clarke, and six visitors.

The Chairman apologised for the absence of the Hon. Sec., Mr. MacCormack, through illness.

The minutes of the last meeting were taken as read.

Correspondence.

Mr. Lionel Stroud, who acted as Secretary, read the correspondence, which consisted of a letter from Mr. G. J. Bell, who expressed his willingness to represent the Society at the Congress in Belfast in July.

There were also three letters bearing upon the paper to be read by Mr. Hunting.

Morbid Specimens.

Mr. T. Salusbury Price exhibited a specimen showing fracture of both first ribs of a horse. The animal met with an accident in Regent Street, and on being taken to the stable in an ambulance, at once showed radial paralysis of the near fore leg. He was able to bear weight on the other leg. After a few days the latter became weak and was unable to support weight As there appeared to be no improvement in three weeks the animal was destroyed and the specimen obtained showing that both front ribs had been broken. The fracture of the right first had united with a large amount of callus, but the left one was still united in spite of a large amount of bony deposit. Many of the features of the case were unique in his experience.

Mr. Ainsworth Wilson showed the genital organs of a cow which was sterile. He drew attention to the ovaries. The left ovary contained a large cyst, and the remains of several persistent yellow bodies. The right ovary was shrunken owing to having been immersed in formalin. There were also traces of yellow bodies in the right ovary. The cow calved twelve months ago and had shown no œstrum during the whole of that time. She was slaughtered during the early stages of traumatic pericarditis, previous to which a rectal examination of the genital tract had been made. The sterility was due to a large cyst in one ovary, and persistent corpora lutea in the other.

He also showed the genital organs of a thoroughbred mare. She had had several foals, but had not bred for three years. She was put under his care in the spring. On rectal examination, he found that the right ovary was cystic, and the left ovary somewhat atrophied. The uterus, os, and cervical canal were normal ; but at the owner's wish he inseminated the mare twice and obtained permission to remove the right ovary in the autumn. She developed another disease altogether, was greatly emaciated, and was killled. The right ovary contained a fairly large cyst, the fluid from which filled an egg cup. There were several small cysts in the broad ligament, quite ¾-in. from the hilus of the ovary. In spaying the mare it would have been necessary to have taken a good portion of the broad ligament in the chain of the écraseur. There was no nymphomania in this case, and the mare came regularly in use every fortnight; nor was any enlargement of the right horn, associated with the cysts.

Prof. Wooldridge, referring to Mr. Price's specimen, said a very interesting feature was that the horse was kept alive for three weeks before being slaughtered. That gave an idea of the time required for the formation of various bony enlargements. That fact could be applied in other directions. Sometimes people went into court and said it took twelve months for an exostosis to form, and that one could not grow in such a short time as three weeks. He understood that the horse was able to stand for some time on one leg, and it was not until a later stage that it was unable to stand at all. He asked whether anyone could give an explanation of that. It seemed to him that in one instance the nerve was implicated at first, and in the second was only implicated by the bony enlargement. If it had been realised that there was a double fracture, no doubt the animal would not have been allowed to live three weeks.

The International Veterinary Congress.

Prof. Wooldridge moved, according to the notice he had given, "That the Central Veterinary Society make a grant of ten guineas this year and each succeeding year until 1914 towards the Entertainment Fund of the International Veterinary Congress to be held in London." Last year, he said, the same suggestion was brought forward, but it was referred to the Council, but the Council, owing to some oversight, did not take the matter in hand. He himself brought it before a subsequent Council meeting, and they referred it to the general meeting. If the Society could afford that money, in instalments, he thought it should grant it. It would be a good thing if other societies would follow suit, in so far as their respective funds would permit ; they would not feel it so much as granting a lump sum when the

date was nearer. The fund had been already started, and Mr. Woods, of Wigan, had sent £10. Mr. Hunting had the matter in hand.

Mr. PRICE seconded, and it was carried.

It was intimated that the matter would be dealt with at the next meeting of the Council.

NOMINATION.

Mr. G. W. LUCKING, M.R.C.V.S., Chelmsford, Essex, was nominated for fellowship of the Society.

SOME QUESTIONS CONCERNING SPAVIN.

By WILLIAM HUNTING, F.R.C.V.S.

Definition. A bony enlargement on the lower and inner aspect of the hock.

1. Is spavin hereditary?
2. Does any conformation of hock predispose to its occurrence?
3. Does it arise in the ligamentous or osseous structures?
4. Is the enlargement or the lameness first apparent, or are they simultaneous?
5. Is there any definite alteration of action which indicates spavin lameness?
6. How does spavin cause atrophy of the gluteal muscles?
7. Why does the pastern become upright and the horse go on his toe if spavin lameness persists?
8. What is the best treatment?

The PRESIDENT read communications on the subject from Maj.-General Smith, Col. Blenkinsop, and Mr. Angwin:

Definition. I do not think this goes far enough. The worst variety of spavin, viz., the articular, may be associated with no enlargement, or but little.

Question 1. All questions of heredity should be tested with infinitely greater care than has previously been exercised. It is as impossible for me to get heredity out of my mind in the matter of spavin, as it is to uproot the Alphabet. Yet I have never had an opportunity of making a single observation on the point in the special class of practice at which I have spent my life!

2. Spavin will occur on hocks of the best shape, but on the whole I think the narrow and short hock the most predisposed.

3. I think invariably in the bone; yet I regard the analogous condition in the fore limb, viz., ringbone, as frequently arising from ligamentous sprain. Why I deny sprain of ligament as a cause in spavin I cannot say.

4. As a rule the enlargement, but many cases occur where lameness without enlargement is the first indication of trouble.

5. I only know of one, over which none of us are likely to disagree, viz., dragging the toe.

6. I have never recognised this symptom, but have often wondered why it was absent.

7. Is this not due to mechanical shortening, the result of the heel being raised raised off the ground? Will not the same thing occur from a prolonged use of a high-heeled shoe in a sprain of the flexor tendons?

8. If the disease is ulcerative, it is incurable. If the joint is not affected there is no method of treatment that can be put forward which is an advance on, or more modern than, that in vogue 160 years ago. I think in this matter we have, as a profession, a good deal of which to be ashamed.

F. SMITH.

Definition. Not sufficiently definite. I suggest that the profession only recognise as spavin cases of arthritis or its resulting anchylosis occurring in the joints between the cuneiform bones or these bones and the astragalus or metatarsal bone.

Question 1. The conformation predisposing to spavin is hereditary.

2. Undoubtedly.

3. Sprains of ligaments should not, in my opinion, be considered spavins.

4. In true spavin, lameness appears in the initial stages, but there may be no enlargement.

5. Yes, there is alteration in the action. A peculiar movement especially transmitted to the point of the hock is one of the most definite symptoms.

6. By want of use of those muscles.

7. Chiefly, seen when the disease is anteriorly situated. It is due to want of flexion of the joints, as in 6.

8. Deep pyro puncture with French iron.

L. J. BLENKINSOP, Colonel A.V.S.

Question 1. Spavin in many cases is no doubt hereditary, but in most cases due to other causes.

2. A curby hock, badly shaped and weak hocks, are a predisposition to the disease.

3. In nearly every case the trouble first starts in the bone, the other structures become implicated later.

4. This depends to a great extent on the age of the animal, in young horses one may get the enlargement first and the lameness later, in older animals the lameness is usually first apparent, and later the enlargement appears.

5. The action of a spavined horse is most diagnostic, especially the dragging of the toe.

6. This atrophy is no doubt due to the disuse of these muscles in advanced cases where anchylosis of the hock has taken place, or where some of the tendinous attachments are involved.

7. This is usually due to inability to flex the hock sufficiently to allow the heel to come to the ground, also contraction of the hoof which soon follows.

8. If fireing and blistering fails to cure this condition, little else in the way of neurectomy or tenotomy will prove of much avail.

J. T. ANGWIN.

Prof. WOOLDRIDGE said he hoped it would not be regarded as out of place for him to compliment Mr. Hunting on the excellent way in which he had introduced the subject. It was quite original, he thought, and very much to the point, because it pinned members down to the questions which the opener thought most worthy of discussion. He did not feel sure that the definition given by Mr. Hunting covered the ground; indeed, in the course of his paper he admitted as much himself. He not only said it was a bony enlargement, but that it commenced as an ostitis, and Mr. Hunting would probably admit that the ostitis, if it could only be diagnosed, should still be diagnosed as spavin. He could not himself pretend to give a definition of spavin which would cover the whole ground. If there was a condition of hock which was causing lameness, and which ultimately resulted in an enlargement of the hock at that particular place, they would probably be right if they diagnosed the case still as spavin. Was spavin hereditary? He could say, with General Smith, that he had no personal experience of that, but he had a difficulty in excluding it from his mind. It was probably hereditary, but in what way it became so he did not know, except that he was of opinion that spavin would develop in most horses in later life which had spavined parents. In many cases it did not occur in young horses, and that was another feature of the difficulty in regard to heredity. He did not think any particular conformation predisposed to the occurrence of spavin; it was met with in all kinds of hocks, but he thought it was more likely to occur in what were termed pretty, delicate hocks than in those which were of coarser construction. With regard to whether the condition arose in the ligamentous or the osseous structures, he believed that the

state first appeared in the bones, and extended centrifugally; that in some cases it extended to the margin of the bone, and in others towards the flat articular surface, so that there might result either enlargement of the hock, or arthritis, or both. He did not consider that any definition which looked upon spavin as primarily arthritis, as suggested by Col. Blenkinsop, could be accepted. In some instances there was bony enlargement without arthritis, sometimes there were both. With regard to the question whether the enlargement or the lameness appeared first, or whether they occurred simultaneously, he was unable to glean Mr. Hunting's view on that. (Mr. Hunting: I cannot answer it). If one did agree that ostitis was the origin, and that ostitis did occur in the early stages, without any external enlargement, one must be driven to the conclusion that lameness might exist from that diseased condition of hock before enlargement occurred. That was what he believed, that in some cases there was lameness from that condition, without enlargement. That was what he understood by the term—which Mr. Hunting studiously avoided—"occult spavin." He considered it to be the earlier stages of the condition which Mr. Hunting would not name. (Mr. Hunting: I accept a swelling in a certain place as spavin, irrespective of its pathology.) Mr. Hunting also admitted the existence of ostitis, and he (the speaker) would apply the same term where the ostitis had extended to arthritis, and where there was no external enlargement. He wished, if possible, to give some name to that earlier condition, in which, he thought, lameness existed before enlargement of the hock, and he regarded that as "occult spavin."

With regard to whether there was a definite alteration of action which indicated that there was spavin lameness, Mr. Hunting said there was not. Broadly, he agreed with Mr. Hunting, but he thought there were certain peculiarities of action which could be noticed in some forms of spavin lameness which assisted one in arriving at an opinion, even before feeling the actual spavin. A symptom alluded to by General Smith was present in some, but not in all—slipping on starting. The lameness also, as Mr. Hunting said, passed off with exercise, to be renewed on standing. Another symptom which assisted one, but was not diagnostic, was a shrinking of the muscles of the quarter as the leg was being flexed; there was interference with the action of the hock and of the stifle simultaneously, those two joints were not properly flexed. There was also some peculiar modification of the quarter on the affected side, and the quarter of the affected side was usually carried lower than the opposing quarter. Probably none of those were diagnostic, but they assisted in the formation of an opinion on a case, and they could only be verified by manipulation of the joint afterwards. Where one could find a marked exostosis, he would consider that the symptoms he observed with that exostosis would suffice to tell him that the spavin was the cause of the lameness. Where careful examination did not show exostosis, and there seemed no other cause for the lameness, and the peculiarities of action were as just described, he would assume the cause to be in the hock, and that it was due to what was known as "occult spavin," or the early stage of the disease. On the other hand he would suggest that this bony enlargement might exist in a lame leg and not necessarily be the cause of the lameness. With regard to the question as to how spavin caused atrophy of the gluteal muscles, he thought Mr. Hunting's explanation was an excellent one; it seemed to account for the atrophy of those muscles in long standing spavin. By means of diagrams, and by standing beside skeletons, he had tried to find a mechanical reason for the upright condition of the pastern, but had failed to do so. He would adopt Mr. Hunting's idea that it was a modification simply due to the adaptation of the animal to relieve the pain, as far as possible, in the affected joint. What was the best treatment? Most would probably agree that firing and blistering was the best mode of treatment. But in many cases, where he had had no success from firing spavin, he had had success from what might be described as a badly performed cunean tenotomy with scarification. He first made an incision in the skin over the cunean tendon, and cut straight down on to the bony tissues, through that tendon, and, with closed curved scissors, separated the tissues over a circle as large as a five shilling piece. Then he inserted the periostomy knife, turning the cutting edge to the bone, and cutting on withdrawal, doing that the whole way round, making really as much a me-s of the part as possible under the skin and over the spavin, as it set up a larger inflammatory result than would ensue from an aseptic operation, and that inflammation set up improvement in the spavin. Inflammation is really a process of repair. In some cases he got rapid improvement by that means in cases in which firing had failed, though he admitted there might be something to be said on account of the interval which had elapsed. Though it scarcely was right to say so as a teacher, he thought the operation was better in result if it were not done aseptically. It was much the same process as had been carried out by Freeman, except that he (the speaker) did not insert a seton, and he did cut the tendon. Freeman's effort also had apparently been to cause considerable inflammation. He (Prof. Wooldridge) had had experience of both forms of neurectomy, and of a combination of the two, and he did not think it was worthy of trial. In about 20 cases in which he did the double operation he only got one case which he regarded as cured—and that might have been in spite of it. In some others he had had to send the horse to the knacker, as there had been produced paralysis of the extensor pedis, and the horse was quite unable to extend the foot and walked on the front of the fetlock joint.

Mr. Ainsworth Wilson congratulated Mr. Hunting on his excellent paper; It was the kind which members had learned to expect from him. He did not think Mr. Hunting's definition was sufficiently comprehensive, but he was dealing with the disease from a clinical standpoint, and from that point of view it was a very good work-a-day definition. His objection to it was that it did not include so-called spavins which were due to enlargements of the head of the metatarsal bone. There was a bony enlargement situated low down in which the cuneiform bones were not affected, but on cursory examination one would think the horse had a spavin. He had an Arab horse affected in this way which he hunted, and which won some Gymkhana events. He flexed his hocks splendidly, nevertheless he had been rejected for spavins. The hereditary nature of spavin was generally accepted, though many were not prepared with facts to bear that out. He thought he had noticed a spavined sire produce spavined stock, but he could not now give the facts. While there was no special conformation, stress should be laid on the small fine hock, as that was the one most liable to spavin. The articular surface was small, and thus the pressure was distributed over a smaller surface, and there was more likely to be articular trouble from pressure or from strain. He thought it was waste of time in a clinical paper to discuss whether the process commenced in the ligamentous or in the osseous structures. Some cases seemed to begin in the ligaments, but in most the ostitis or periostitis seemed to be primary, and the inflammation was followed by visible enlargement, or the inflammation extended inwards between the small bones and one got occult spavin. The period during which it was occult was short as a rule, and within a short time there was definite enlargement.

With regard to the question whether the enlargement or the lameness came first, or whether both occurred

simultaneously, most had probably seen cases in which both enlargement and lameness had been present, but probably if the case had been seen earlier lameness alone would have been present. There seemed no reason why the two should not occur together in some cases. In most cases lameness occurred first, and these bothered one a good deal in the matter of diagnosis when first seen. With regard to there being any definite alteration of action indicating spavin lameness, he agreed with those who thought there was no alteration, but he did not think that two or three diagnostic symptoms had been sufficiently emphasised. If a horse with spavin were turned over in the stall it would go over lame and on the sound side. When brought out of the stable it would be more likely to show the lameness or stiffness at first than after it had gone a little way. If the trouble had been present for any time, the shoe would be found worn at the toe. Then there was the well-known spavin test, *i.e.* violently flexing the hocks; but that test was not quite conclusive, because some horses which were free from spavin would respond. A horse lame from spavin got his foot well forward; he was inclined to catch or drag his toe. He might pluck up his foot almost as in stringhalt, but he did not flex the sprained hock like the other. It was true one could not diagnose spavin from the gait alone, one must see a definite enlargement before giving definite opinion in most cases. He would be a bold man who said spavin existed unless he could feel it.

How did spavin cause atrophy of the gluteal muscles? Mr. Hunting had given an ingenious and plausible explanation.

Why did the horse go on his toe if spavin lameness persisted? In that condition the hock was insufficiently extended, and when the horse was lame he carried the leg in the easiest manner possible and the pastern was more or less upright, because it was the easiest position in which the horse could hold the leg. With holding the limb so long in this position during severe lameness, it was liable to remain so later on.

With regard to the best treatment, that resolved itself into producing bony union as quickly as possible. And that was done in various ways. Operation methods had been successful to some extent, and each method had its advocates; but most would agree that firing with pointed irons would produce as good, if not better, results than the ordinary operations which were so much extolled. He preferred to put the horse down and use a fine platinum point with the thermo-cautery, and go as deeply as he dare. If it were a big spavin he went deeply, and if a small one he was cautious. He made half-a-dozen punctures, as a rule, and then applied a dusting powder. He believed he got good results from that, using of course a high-heeled shoe. If he operated he preferred to do a periostotomy, and he took it that this included the cunean operation, and included simple methods such as setoning, the idea being to produce all possible inflammation. In periostotomy one usually divided the cunean tendon and separated the periosteum, and even cut into the bone. He agreed that one should not aim at the operation being aseptic, as the idea was to produce a good deal of inflammation. After using various methods of firing, he preferred puncture with platinum points, because that did not produce a slough. If that were not advisable, or the owner did not wish the horse to be cast, one could line fire or use the ordinary pointed iron. He objected to this iron, because there was so much burning of the skin, and one could not get the punctures close together. The periosteum should be penetrated in order to relieve pressure, both in splints and spavins.

Mr. PHILP said he thought he could give some evidence on the point as to spavin being hereditary. A horse ran third for one year's Cesarewitch, and was affected with spavin. When at stud, he was in his (Mr. Philp's) district and he had very good observation of the horse. Ninety per cent. of his stock was affected with spavin. With regard to the best form of treatment, he had seen Mr. Freeman perform his operation. In addition to separating the skin and underlying structures he used a sharp six-pointed punch, and punched the spavin through the skin, which was objectionable, as there was much sloughing of skin, which disfigured the area very much.

Mr. W. R. DAVIS said he had only a few observations to make after what they had heard. He thought that in most instances the condition of spavin arose in the ligamentous structures. And the explanation of why there should be ostitis afterwards was furnished by remembering that, of the ligaments which bound the bones of the hock together, the flexor metatarsi and the cunean tendon played an important part. If the ligaments of the hock underwent damage they did not perform their function properly; there was much more movement in the bones than naturally took place and consequent danger of injury. There was great divergence of opinion as to whether the condition arose in the ligaments or in the bones. Many of the best authorities were of opinion that the disease commenced in the ligaments, not in the bones. There was seldom spavin in cart horses; the condition was mostly in lighter horses. If the spavin arose from ostitis one would expect the weight of the big horse on the bone would be more likely to produce it in them than in the lighter horses.

He agreed with Mr. Hunting that there was no particular action about the spavined horse which would enable a man, even one of experience to say in the absence of bony enlargement, that spavin was present. Mr. Hunting's explanation of the atrophy of the gluteus was ingenious, and probably was right. He believed that one reason why the horse's pastern became upright was that he never extended his hock, but kept it straight to prevent it getting far back.

As to the best treatment, he agreed with what Prof. Wooldridge said, and he could quote a case in point. He was called to see a mare which had been bought by a gentleman; it had already been fired when he bought it. Six months afterwards the animal went lame, and he, Mr. Davis, examined it. He blistered the mare with a solution of perchloride of mercury in alcohol, and the result seemed to be good, as she went all right for nine months. Then she went lame again for the first 400 or 500 yards. He puncture fired her with knitting needles, after which she went all right again for a year, but after that again went lame. On being asked whether he could do anything more, he said he could not, and advised that the mare should be turned out to grass for a year. But at the end of that time she was no better. One day he went down and performed the operation which Prof. Wooldridge mentioned, but she was no better in a month, therefore he was asked to sell her for what she would fetch. He sold her to a man for £4, and at present she was perfectly sound. The man who bought her turned her out for a little while longer, and after that he used her every day. Probably the direct treatment of the periosteum brought about the necessary changes.

Mr. SAMSON thought that the kind of spavin which Mr. Hunting meant was a bony growth of bone from bone. He believed that in some cases it was hereditary, but only in some. He had a four-year-old which he rode to the Surrey stag hounds. He went at a good pace in order to clear a fence. The fence was cleared, but the mare went lame in the next field. He sent her home quietly. Her hock swelled and there was much inflammatory action, and from that day onwards she had a spavin. It was directly due to a sprain in taking the leap. With regard to any particular conformation predisposing to the condition, he agreed that the strong looking rough horses were less likely to have spavin

than were those with delicate and so-called pretty hocks. With regard to whether the condition arose in the ligamentous or the osseous structures, if it was occult spavin, or articular, he thought it arose in the bone; but if it was spavin after sprain it arose in the ligament.

As to whether the lameness or the enlargement appeared first, or both together, that could be answered both ways. If it arose from sprain, enlargement came first, but if it were occult spavin or articular spavin, lameness was first noticed. He did not think there was any particular alteration of action indicating spavin lameness. In the absence of that, if the horse did not wear the heel of his shoe, but only the toe, and went the first few yards stiffly and aftewards went better, and if on being put in the stable for an hour and taken out again he again went stiff and that went off again after he had gone some distance, it was probable that he was developing spavin. He did not know how spavin caused atrophy of the gluteal muscles.

With regard to treatment, he did not think Mr. Freeman was the only one to do the procedure which had been mentioned, nor did he invent it. When he was articled in Norfolk, 40 years ago, it was a very favourite operation for dealers, etc. Carter at that time opened the skin with a bistoury, 6 inches below the hock, and passed a blunt-pointed needle up, and that was poked about for two or three inches upward and downward, right and left, well over the spavin. Then there was inserted some tow saturated with spirits of wine and bichloride of mercury. That was followed by pain for two or three days. Care was taken to squeeze out the discharge. No blemish resulted if it were nicely done. He asked how much blemish Prof. Wooldridge got from his operation (Prof. Wooldridge: In some cases very little, beyond the faint scar covered by the hair). If it was thought that a horse was developing spavin, treatment in the early stages by thorough firing and blistering with Hyd. biniod. the horse turned out six weeks or two months after, it would probably be workably sound for the rest of its life. With regard to there being any alteration of action which indicated the occurrence of spavin, his opinion was that such a horse did not flex the hock in the same way as he did normally. The sound hock would be flexed quickly from the ground, whereas the affected one would work stiffly and stilty, and carried somewhat straight. The degree of that defect would vary with the length of time that the condition had been present.

Mr. McIntosh said he thought Mr. Hunting's definition was not sufficiently wide, he would include in the definition that inflammatory condition of the hock involving the lower and inner aspect, which he thought was always present previous to formation of bone. He ventured to think that this condition was quite diagnostic of spavin, and was happily covered by the term occult spavin.

He was satisfied that the predisposition to spavin was transmitted from sire or dam to offspring. He had some experience in a breeding district, and he could recall several cases in which the inherited predisposition was followed by the formation of well defined spavins. He remembered one particularly interesting case, of a dam with spavined hocks in which nearly all of her progeny (and she had many) ultimately developed spavins. It might not show in the year-old, in the two-year-old, or even in the three-year-old, but immediately the animal was subjected to the exciting cause, namely, exertion, the inherited defect would soon show in the formation of spavin.

He agreed that all forms of hock are the seat of spavins, but he believed that certain forms of action and hock formation was much more likely to result in spavin. He thought from a point of utility the horse with strong coarse hocks was likely to be more useful, and although they might not look so well to the critical eye, they were less likely to go wrong under stress of work.

His view was that lameness was the first visible symptom, and was generally in existence for some little time before any enlargement was noticed.

With regard to whether there was any alteration of action which indicated spavin, he could not say positively, but there were certain indications which would lead the practical man to reasonably suspect the commencement of spavin. If there were limited flexion of the hock itself and the absence of indications of disease elsewhere, he thought one would be justified in concluding that the hock was very likely the seat of the disease. Probably the animal with spavin did not flex the hock as well, and there was a tendency to go on the toe.

With regard to treatment, firing, blistering, and prolonged rest seemed to be the best, with emphasis on the prolonged rest.

Mr. Perryman thought members were much indebted to Mr. Hunting for the manner in which he had brought the subject forward; it was his characteristic way of inducing everyone to take a turn in this discussion, so that a large number of opinions were elicited. The definition Mr. Hunting gave was very concise, and was good enough to work by. The author confined the condition to the lower small bones. There were many bony enlargements, especially inside the malleolus, which could not be called spavin, and by confining the term to the condition as affecting the lower and inner aspect of the hock, the definition was more correct. With regard to any conformation of hock predisposing to its occurrence, he had practised for 20 years in London, and he did not think one could say it was peculiar to a large or a small hock. With regard to the small hock, the animal was worn out before he showed much spavin; the tendons had given way long before the spavin occurred. With regard to whether it arose in the ligamentous or the osseous structures—he had looked upon it as an ostitis, although possibly at times the ligamentous structures were involved. Perhaps Mr. Hunting, after the number of examinations he had made, would enlighten members as to whether he considered the condition was, in the early stages, a condensing ostitis followed subsequently by a rarifying ostitis. He was himself inclined to think it was a condensing ostitis to begin with, and that through this the articular surfaces became involved, and finally ankylosis occurred. There must be some arthritis about it, otherwise there would not be ankylosis of the bones themselves. The cartilage must be absorbed, and then bony union took place. Lameness was apparent long before a bony deposit was seen; certainly in the majority of horses affected with hock disease. If there was bony enlargement there was no question about the disease. In the early stages one had to rely upon the negative evidence; the absence of other causes of lameness in the limb. He attached much importance to the movement of the animal from side to side in the stable, and to the fact that it started to walk on the toe. No one had yet mentioned the action when the animal was backed. In the early stage of spavin, when the horse was backed, it did not get the heel down properly, and that fact, with the added one that the lameness wore off after walking for a time, strongly suggested spavin. The dragging of the toe he did not think was always suggestive of hock lameness. He had noticed that in the case of some horses which were injured at the point of the ileum or at the stifle, and he was sure it was seen when the flexor metatarsi muscles had been strained. The animal struck the toe because it was unable to flex the hock properly. Moreover, in the latter condition the animal got worse the further he went, and in that it differed from spavin

lameness. In regard to questions 6 and 7, he thought Mr. Hunting had done the profession good service.

In regard to treatment, he relied upon firing and blistering. He punctured with a small iron once, in the case of his own cob, and he accidentally opened the joint. It closed again, but he had been very careful since, the animal was never really sound afterwards. He would not mind using a puncture needle if he had a spavin as large as one's fist, because there was then no risk of entering the joint. Usually he was very chary about needle firing for spavin, and he regarded rest as the most important factor. Unless treatment were adopted in the early stage there was a risk of permanent lameness.

Mr. BUTTERS thanked Mr. Hunting for the original way in which he had presented the subject. With regard to heredity, many years ago he had considerable experience with the stock of a thoroughbred horse of the "Sugar plum" breed. The owner had obtained it as a cast-off from a breeding stud. The horse had two well-marked bony spavins. They had been fired and the hocks were unsightly, so that farmers were shy of sending mares to it. But afterwards that was got over when the progeny took prizes at local shows, and he did not believe that any of them suffered from spavin. He believed that spavin was not hereditary in all cases from the sire, though it might be from the dam. He thought there was a characteristic way in which a spavined horse stood in the stable. Its spavined leg was extended and rested on the toe. He did not think there had been much alteration in the treatment of spavin for many years, though the method of firing might vary according to fashion. Many years ago the late Mr. Robinson, of Tamworth, who was considered an eminent authority, used to fire with a flat iron. He remembered a famous Derby horse which he treated in that way, and it recovered. Sloughing spavins was also a common method of treatment many years ago.

Prof. WOOLDRIDGE, speaking for his friend beside him, Captain Hortopin, of Bukarest, said that that gentleman had had considerable experience in connection with the State studs in Roumania, and he had seen many instances where spavin had resulted hereditarily, the offspring developing it at about the third year, when the horse was put to work. It was considered so far proved in that country that in the Government studs all the stallions possessing spavin were castrated. The treatment there was the same as here: first blistering, then puncture firing. If they did not answer, tenotomy was performed.

He wished to add on his own behalf that he did not mention the word "periosteotomy," and that was because there was some difference of opinion among some anatomists as to whether on the small bones there was periosteum or not. He therefore called it "subcutaneous scarification."

Mr. HUNTING, in reply, said it would be more expeditious to mass the criticisms for the purpose of dealing with them. Some considered that his definition was not comprehensive enough, but the name spavin carried with it in the minds of the public and horsemen a certain significance. The public thought that without swelling there was no spavin. The cleverest could not diagnose an occult spavin without swelling, and swelling at some other point of the hock would not be spavin.

He had not elicited much information in reply to question 1, but one speaker mentioned a sire whose off spring showed a very large proportion of cases of spavin, and a case of a dam was mentioned in which the same obtained. But Mr. Butters' evidence was to the contrary. The remarks as to a big and a small hock reminded him of the question "How big is a lump of chalk?" He would ask for some photographs and measurements. There was a difference of opinion as to whether the condition arose in the ligamentous or the osseous structures, and while that difference persisted veterinary surgeons could not make up their minds as to treatment, or as to the pathological process which was going on in the disease. He did not know another case in which strained ligament would lead to destructive changes in bone and articular surfaces. There might be an enormous strain and yet no sign of articular mischief. In "sprung hock," where the hock was twice the size it should be, there was no osseous changes. There had been contradictory answers to question 4, from which it might be assumed that sometimes lameness occurred first, sometimes the enlargement. Most seemed to think lameness occurred first. The surgeon was not called in early in lameness unless it was very intense.

It had been said that a sign of hock lameness had been that the sound leg was brought up quicker than its fellow, whereas Mr. Samson said the opposite. He did not know how two men could differ so much in a matter of observation. When a horse "snatched" his leg, he regarded it as a sign of spavin. With regard to the pastern being upright, one or two speakers talked about the inability to flex the hock, and another said there was a difficulty in extending the hock. He did not think the movement of the hock had anything to do with the way the horse went, or with how he wore his toe. The want of flexion of the hock was over-valued. The only thing which stopped flexion in a horse was pain. The tibio-astragalar joint was hardly ever affected, and the whole flexion took place between those two bones. All were agreed that firing was the best that could be done for the condition. With regard to cunean tenotomy, the inventor said it was more a matter of counter-irritation than anything else, and some speakers here thought the more irritation set up at the spot the better. The cunean tendon was exactly over the top of the spavin, and the tendon was buried in the exostosis sometimes. Was it not feasible that by dividing that tendon one would relieve the parts beneath of much pressure? And when it healed up, there would be adhesion throughout the whole of the bursa, and the pull would be on the part most anteriorly attached. In other words, the pressure would be less on the spavin afterwards than it was before, even if one only divided the tendon.

Mr. Hunting and the President were cordially thanked.

HUGH A. MACCORMACK, Hon. Sec.

GLASGOW VETERINARY COLLEGE.

The second annual general meeting of the Glasgow Veterinary College (Incorporated) was held on 14th inst. in the office of the secretary, Mr. Alexander Russell, West Nile Street. In the absence of Sir Hugh Shaw-Stewart, Bart., the chair was occupied by Mr. J. Campbell Murray, vice-chairman of the Association. The report of the Governors for the year 1910-11 was submitted, and showed that, although the number of students attending the College was somewhat less than last year, a very satisfactory percentage of passes had been attained. Out of 32 students who presented themselves to the Board of Examiners appointed by the Royal College of Veterinary Surgeons, 26 passed successfully, 5 of these obtaining honours. A total pass of 81.2 per cent. had thus been attained.

The report showed a slight decrease in the amount of fees collected during the year just ended, but this was accounted for by the corresponding decrease in the number of students enrolled. As a result of a friendly conference which had been held in Edinburgh with the Committee of the Royal (Dick) Veterinary College, the table of fees had been revised and was now on an equal

scale with that of the Edinburgh College. Although the revenue account for the year 1910-11 showed a deficiency on the year's working, there was reason to believe that another year would see a considerable improvement in the financial position of the College.

Considerable improvement had been made in the equipment of the College, especially in the physiology section. The report also stated that the Governors were contemplating a scheme for the improvement of the College buildings, which would involve an expenditure of at least £2,000, and that application had been made to various bodies with a view to raising this sum.

On the motion of Mr. Campbell Murray, seconded by Mr. Alexander Park, the reports, accounts, and balance-sheet were adopted.—*N.B.A.*

Swine Fever—Committee's Interim Report.

The following are the conclusions arrived at by the Departmental Committee appointed by the Board of Agriculture and Fisheries to inquire into swine fever:

Administrative.

Many criticisms have been offered as to the different aspects of the present administration, and various suggestions have been made by witnesses, but both criticisms and suggestions have been of a conflicting and contradictory nature. No case has been made out for any radical change in the administrative machinery now employed by the Board.

The Committee are satisfied that:

(1) The administrative control must remain, as now, in the hands of the Central Authority, *i.e.*, the Board of Agriculture and Fisheries.

(2) Restriction on movement, including movement from markets, must continue to form an essential part of any measures adopted to extirpate swine fever.

(3) The policy of "slaughtering out" in the case of all outbreaks now in force in Scotland and Wales, should be applied to the country generally as soon as practicable.

(4) The present scale of compensation should be maintained.

(5) In the general interest of the industry the size of infected areas should be kept as small as possible, due regard being had to the object in view.

General.

We are of opinion that much ignorance and misconception exists as to the nature of the procedure now employed in the attempt to eradicate swine fever. Cordial co-operation between pig-owners and the authorities, both central and local, is thereby rendered difficult of attainment. Every effort should be made to remove these fruitful sources of friction.

The attention of the Committee has also been called to the confusion arising from the want of uniformity in the printing of licences and declarations required by the Board's Orders. It is important that all local authorities should co-operate cordially with the Board, and should adopt a completely uniform system of procedure with respect to the granting of licences, and standard forms, both as regards size and colour, for licences and declarations.

We are further of opinion that the validity of licences may usefully be extended to eight days, as an assistance for owners sending swine long distances.

Out of a total of 324 local authorities in Great Britain, 43 have adopted regulations under Article 16 (1) (*a*) of the Swine Fever Order of 1908, requiring owners of boars kept for service to keep a register; and 113 have adopted Article 16 (1) (*b*) requiring pig-dealers to keep a register. The Committee are of opinion that the provisions of this Article, instead of being permissive as at present, should at once be made compulsory.

In 1901 the Royal Commission on Local Taxation recommended that the whole of the expenditure incurred by the Board of Agriculture should be borne by the Exchequer.

The Committee regret that in consequence of a recent regulation prohibiting the printing of marginal references they are unable to present the Report in the convenient form employed by the former Committee. As, however, they consider that a report of this nature cannot be properly studied, in conjunction with the Minutes of Evidence unless reference numbers are available, they have inserted the necessary references in the text at the conclusion of each paragraph. They hope that this expedient, though less convenient than the former practice of inserting marginal notes, will serve a similar purpose. The Committee desire to place on record their opinion that the inconvenience and loss of continuity, resulting from this change of practice, is entirely disproportionate to any economy which can be effected thereby.

We have the honour to make the following recommendations:—

RECOMMENDATIONS.

(1) In order to extirpate swine fever the policy should be adopted as rapidly as possible under which: (*a*) All swine known to have been, or reasonably suspected of having been, exposed to the contagion of swine fever, should be slaughtered, with compensation; (*b*) the movement of swine from markets should be controlled by licence requiring subsequent isolation.

(2) The whole of the expenditure incurred by the Board of Agriculture and Fisheries should be borne by the Exchequer.

(3) The general restrictions on the movement of swine should be maintained.

(4) Article 16 of the Swine Fever Order of 1908 should be made compulsory as regards paragraph (1), which provides (*a*) for the owner of any boar kept for service of sows other than his own, keeping a register; (*b*) every pig-dealer keeping a register of purchases and sales; and (*c*) in respect of all carts in which swine are conveyed to markets, sales, or fairs, the carts to be disinfected by the local authority before leaving the market, sale, or fair.

(5) Castrators should be required by the Board to keep registers of their operations.

(6) The validity of licences for movement should be extended to eight days.

(7) A completely uniform system of procedure should be adopted by all local authorities, both as regards the granting of licences and the interchange of declarations.

(8) To secure uniformity, forms required by the Board's Orders should be put on sale by H.M. Stationery Office.

(9) Steps should be taken by all local authorities to secure the collection of all licences for movement, immediately after use.

(10) Insanitary premises on which outbreaks have occurred should be kept closed until the alterations necessary for thorough disinfection and for preventing the danger of the spread of disease in case of the re-introduction of infection have been carried out.

(11) All swine exposed in markets, sales, and fairs should be inspected by a veterinary inspector employed and paid by the local authority.

DISEASES OF ANIMALS ACTS 1894 TO 1910, SUMMARY OF RETURNS.

Period	Anthrax. Outbreaks Confirm'd	Anthrax. Outbreaks Reported	Anthrax. Animals Confirm'd	Anthrax. Animals Reported	Foot-and-Mouth Disease. Outbreaks	Foot-and-Mouth Disease. Animals.	Glanders (including Farcy) Outbreaks	Glanders (including Farcy) Animals.	Counties Affected Animals Attacked	Sheep Scab. Outbreaks	Swine Fever. Outbreaks.	Swine Fever. Slaughtered. *
GT. BRITAIN. Week ended June 17	15		30				4	5		...	76	1006
									Essex 1			
Corresponding week in 1910		30		34			5	12		...	38	304
Corresponding week in 1909		29		37			11	22	Hertford 1	1	39	216
Corresponding week in 1908		22		24			16	64		...	78	506
									London 1			
Total for 24 weeks, 1911	445		535		1	18	100	261		302	1216	13386
									Middlesex 1			
Corresponding period in 1910		761		920			168	466		312	650	5966
Corresponding period in 1909		680		914			278	1091		454	816	7405
Corresponding period in 1908		577		762	3	112	385	1270	North-hampton 1	626	1051	5041

Board of Agriculture and Fisheries, June 20, 1911.

The Cart Horse Parade.

Abandoned last year in consequence of the death of King Edward, the Whit Monday parade of cart horses—Shires and Suffolks—was resumed on 5th inst., without any diminution either of success or public interest. It was no detriment that there should be a falling off in the number of entries to the extent of more than a hundred, as the tendency in recent years has been for the show to become unwieldy. In fact it was on this account that a separate parade of the lighter van horses was started on Easter Monday half a dozen years ago. The total entries were 507 drivers and 644 horses, 23 singles in two-wheeled carts, 383 singles in four-wheeled vans and wagons, 72 pairs, 22 teams of three, and seven teams of four. The following public bodies were represented in the parade: namely, the Corporation of the City of London, the Westminster City Council, and the Corporations of Bethnal Green, Camberwell, Chiswick, Finsbury, Fulham, Hornsey, Paddington, St. Pancras, Stepney, and Willesden. They sent altogether 111 horses, all of them singles. The leading London brewing firms, railway companies, cartage agents, dairymen, and other users of heavy horses sent some magnificent animals full of power and substance, and in every way suitable for the work that they have to perform.

After the horses had passed the veterinary inspection by Mr. F. W. Stanley, Mr. John W. Edwards, Mr. Henry Gray, and Mr. W. Hunting, the work of judging commenced.

For grooming and harness the judges were three members of the Coaching Club, Sir Edward Stern, Mr. Richard Budgett, and Mr. Alfred Vanderbilt, with Col. Gerard Paul from the War Office as the fourth. Messrs. A. H. Clark, John Bastin, F. Griffin, and Wm. Morrell undertook the Shires, and Mr. Horace Dawson and Mr. Herbert Turner adjudicated on the Suffolks, which are certainly growing in popularity as they are increasing in bone. Among the Shires were some very fine bay horses belonging to the South-Western Railway Company, of the type with which the L. and Y. were so successful against the Armour greys at Olympia a few years back. There were also some very fine horses, especially in the singles, of the picturesque old dapple grey colour which still maintains its dominance. In addition to brasses and rosettes a large number of the teams were decorated with ribbons and flowers as on May Day, and every cart, van, waggon, and dray had its full complement of passengers, relatives, and friends of the drivers. Altogether 365 red rosettes were distributed.—*Morning Post.*

Quality of Morning and Evening Milk.

At the resumed hearing of the appeal of Ernest Bradley and Robert Nunn, farmers, of Great Ayton, against the conviction of the Middlesbrough stipendiary, before the Recorder at Middlesbrough Quarter Sessions, Professor Gilchrist, of Armstrong College, said that the analysis presented was quite consistent with the milk being genuine. He added that morning milk invariably had a lower percentage of fat than afternoon milk, owing to the longer interval between the times of milking. His experience of change of feeding was that it did to a small extent increase the quantity, but did not to any appreciable extent improve the quality. Even to starve cows did not appreciably affect the quality. Asked if it was his meaning that the 23 per cent. deficiency on June 1, 26 per cent. on June 2, and 20 per cent. the following day was accounted for by the lapse of time between afternoon milking and morning milking, the witness replied that it would account for greater differences than that. Professor Crowther, of the Harris Institute, Preston, speaking on the results of experiments at the Leeds University farm, said great variations below the standard in percentage of fat were quite common. Witness added that of 230 samples of morning milk he tested during three years, 116 contained under 3 per cent. of fat, and 15 samples had under 2·7 per cent. of fat. Dr. Drinkwater, of Edinburgh, stated that he had never met a case where the intervals in the hours of milking could affect the deficiency of fat to the extent in the sample under consideration. If a cow was fed so as to increase the quantity of milk, the quality was decreased. The Recorder agreed with the prosecution that the onus was upon appellants to satisfy the court that nothing had been done to the milk and nothing done to the cows. Dr. Drinkwater had said he was dubious, and he (the Recorder) was also dubious. The appellants had not discharged the onus, and therefore the appeal must be dismissed with costs.—*Farm and Home.*

New Organism in Milk.

A new organism affecting milk has been isolated by Mr. Wilfred Sadler, Assistant Instructor in Dairying and Dairy Bacteriology at the Midland Agricultural College. In the autumn of 1909 the College received a sample of milk possessing a peculiar flavour and aroma. The milk was soured, and had an aroma resembling caramel, while the taste or flavour was similar to that of milk which had been cooked or burnt; further, the flavour was distinctly bitter, the milk thus being totally unfit for consumption. Quantities of sterile milk were inoculated and submitted to fermentation tests, and were found to possess the same unmistakable properties as were exhibited by the original sample. Experiments of this nature were repeated with various milks, fresh, pasteurised, and sterilised, until it became evident that the trouble was a bacterial one. The adoption of the usual methods for the isolation in pure culture of bacteria resulted in the discovery of the organism, which is of the general type of Leichmann's "Bacterium lactis acidi," and which, on inoculation into the milk, first produces the distinctive aroma referred to, and later brings about coagulation.

In the spring of last year the same trouble arose in the milk brought by the College for manipulation in the dairy, and since that time its occurrence has been intermittent. This intermittent nature of its recurrence has been one of the most prominent features observed during the investigation, particularly during the early part of the year. The contamination has been traced to a particular farm, but as yet the actual source of the organism has not been definitely determined. Mr. Sadler proposes to continue his investigations during the present year.

While the effect of this organism on milk intended for consumption is well nigh disastrous, the result of its action on butter and cheese is very marked, and without doubt it might be the cause of much loss if it should arise in the dairy. Butter and cheese made from milk inoculated with a culture of the organism were found to have the characteristic flavour and aroma, and were both unpalatable and unsaleable. Butter was also made from the cream inoculated with a good lactic acid starter and a culture of the organism. In this experiment the flavour and aroma were sufficiently evident to prove that butter made from cream thus contaminated would have a poor marked value, even when a good starter is added with a view to overcome the taint.—*Staffordshire Sentinel.*

Losses of Sheep in Hunts.

To the Editor of The Times.

Sir,—As losses in sheep this season are not confined to Hunts, the matter is of sufficient importance to ask your indulgence for a little space to answer Dr. Leiper's letter. He directs attention to the "twisted wire worm" as causing mortality in sheep in America and Central Africa. This is a long way from home, and we have not this parasite with us as yet; and, further, he does not tell us whether the harm is done inside the intestines or in the vital organs of the body—an essential alternative.

As to Mr. Rowley's suspected *Strongylus*, it must be noted that grazing animals in warm weather take in a variety of thread-worms, and that it would be unusual not to find some of these in some part of the alimentary canal; and animals weakened by disease are very liable to an increase of them; but to conclude that these are the cause of weakness and death is, as I have said, contrary to knowledge and misleading. But it is far otherwise when the minute embryos of some of these, flukes and tape-worms to wit, gain access into the blood and are carried into any of the vital organs—heart, liver, lungs, brain, etc.—to be arrested in one or other of these organs, and there undergo further development, to the injury of the organ so affected. This is frequently exemplified in the formation of hydatid tumours in various parts of the body by the abnormal growth of the small tape-worm of the dog. Such is the watery tumour upon or in the brain of the sheep, causing "Gid"—the effect of partial paralysis; and such the result of the close association of the dog and the sheep.

So long as this formidable little parasite is confined to the intestine it is perfectly harmless, there undergoing its normal development. It must not be forgotten that there is no disease of man that is not found in sheep and *vice versa*; and that a condition of mere debility is favourable to the increase of worms in the alimentary canal. For the anæmic condition of some of my sheep, I gave a chalybeate (ammonia-citrate of iron) with powdered aniseed and a little ginger, sprinkled upon their food, and I have been satisfied with the result.

In conclusion, I would offer my thanks to Mr. Rowley for bringing the matter to notice; the result cannot be other than beneficial if flock owners will carefully examine sueh animals as may succumb to the disease.—I remain, sir, yours obediently,

JOHN HARLEY, M.D. LOND.

Beedings, Pulborough, Sussex.
June 14th.

Veterinary Dispensaries in Ireland.

In connection with the Scheme of Veterinary Dispensaries in the Congested Districts, which has been in operation since September last, 26 veterinary surgeons have been subsidised. Nine of the districts now covered had previously no means of obtaining veterinary advice. In almost every one of the districts included the scheme is being largely availed of by the small farmers. In one district the veterinary surgeon has dealt with 431 dispensary cases, or an average of 54 per month: in another 338 cases were treated, or an average of 42 per month. Well over 5000 cases have already been treated under the scheme.—*The Farmers' Gazette.*

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,
WAR OFFICE, WHITEHALL, June 16.

REGULAR FORCE. ARMY VETERINARY CORPS.

Capt. F. U. Carr (seconded for service with the Egyptian Army) to be Maj. Dated May 16.

CENTRAL CHANCERY OF THE ORDERS OF KNIGHTHOOD.

Lord Chamberlain's Office,
St. James' Palace, S.W.
June 19, 1911.

The King has been graciously pleased, on the occasion of His Majesty's Coronation, to give orders for the following promotions in, and appointments to, the Most Honourable Order of the Bath:

To be Ordinary Members of the Military Division of the Second Class, or Knights Commanders:—

* * * * * *

Vet.-Col. Francis Duck, C.B., (retired), late Director-General, Army Veterinary Department.

To be Additional Members of the Military Division of the Third Class, or Companions:—

* * * * * *

Col. Charles Rutherford, C.M.G., Principal Veterinary Officer, India.

Army Veterinary Service Annual Dinner.

The following officers attended the dinner on June 16, at Whitehall Rooms, Hotel Metropole.

Maj.-Generals: R. Pringle, C.B., D.S.O., presiding; H. Thomson, C.B.; F. Smith, C.B., C.M.G.

Colonels: L. J. Blenkinsop, D.S.O.; F. Duck, C.B.; E. H. Hazelton, E. W. Larnder, Kay Lees, C. E. Nuthall, A. E. Queripel, W. B. Walters, C.B.

Lieut.-Colonel: R. W. Raymond.

Majors: A. E. Clarke, W. Dunlop Smith, W. B. Edwards, C. B. M. Harris, D.S.O.; F. W. Hunt, W. A. McDougall, T. W. Rudd, H. T. Sawyer, A. Smith, W. G. Tatam, G. K. Walker, G. M. Williams.

Captains: E. P. Argyle, E. B. Bartlett, T. E. Burridge, F. U. Carr, G. Conder, A. J. Dalgleish, H. C. Dibben, H. E. Gibbs, H. Greenfield, P. J. Harris. A. Leaning, D. MacDonald, W. M. Millar, T. A. Nicholas, F. C. O'Rorke, R. Porteous, W. E. Schofield, J. R. Steevenson, L. M. Verney, E. C. Webb, H. C. Welch, A. J. Williams.

Vet.-Captain: C. H. Hylton Jolliffe, 1st Life Guards.

Lieutenants: R. F. Bett, B. R. Body, L. L. Dixson, E. C. Doyle, G. A. Kelly, P. J. Malone, W. St. J. McCartney, E. Nicholl.

Lieut. and Qr. Mstr. T. E. Campey.

Sir Rubert Boyce.

By the death of Sir Rubert Boyce, which occurred on Friday night, June 16th, at his residence, Liverpool, the world of science loses one of its most distinguished professors.

Sir Rubert, who was born in London in April, 1863, was Professor of Pathology at the Liverpool University and Dean of the Liverpool School of Tropical Medicine. Several years ago he had a paralytic seizure, which left him physically enfeebled, though, being a man of indomitable courage and force of character, he did not permit the affliction to stand between him and his important work. So late as Thursday last he was at his accustomed place in the pathological laboratories of the Liverpool University. At lunch-time he went home, and whilst there he had an attack of cerebral hæmorrhage, which proved fatal shortly before midnight on Friday.

The son of Mr. Robert Henry Boyce, C.B., Sir Rubert is said to have been inspired at an early age with the ambition to achieve fame in the realm of medicine. While still young he went to Liverpool, and was installed as Professor of Pathology at what was then the University College and what is now the University. It was his labours in connection with the Liverpool School of Tropical Medicine, founded some years ago by the late Sir Alfred Jones, that will best serve to perpetuate his memory. His marvellous faculty of application exceptionally fitted him for the illustrious fight in which he led the van for the suppression of tropical diseases.

The fame of that institution is now world-wide. A volume by Sir Rubert, just published by Mr. Murray, illustrates the success with which the battle against tropical diseases has been fought. In "Yellow Fever and its Prevention" we learn that Rio Janeiro in thirteen years lost no fewer than 28,000 of its inhabitants from the "Yellow Jack." The methods adopted in the case of malaria were applied. In 1906 the number of deaths fell to forty-two, in 1907 to thirty-nine, the next year they dropped to four; in 1910 there were no deaths at all. This valuable work will be Dr. Boyce's memorial. From the Liverpool School expeditions were sent abroad to examine the nature of tropical diseases on the spot, and Sir Rubert Boyce himself went out as head of several of these expeditions, which attained results of the highest value, which were recognised when in 1906 he was created a knight. Besides his work at the Liverpool University and the Tropical School Sir Rubert fulfilled the duties of bacteriological analyst to the Liverpool Corporation.

Professor Boyce's last speech about a week ago was a plea for funds to establish a professorship in honour of Dr. Walter Myers, who fell a victim to yellow fever while combating that disease in South America. In the opinion of those who best knew his life and work, Sir Rubert Boyce has himself fallen a victim to science at the early age of 48. Among his many scientific treatises may be mentioned "A Text Book of Morbid Histology," "Papers on Tropical Sanitation," and "Handbook of Pathological Anatomy." Sir Rubert was a member of the Royal Commission on Tuberculosis. In January, 1901, he married Kate Ethel, daughter of Mr. William Johnston, head of the Johnston line of steamers. Mrs. Boyce, however, died on the second anniversary of her wedding-day, leaving a little girl, who has since been her father's idol.—*Daily Telegraph.*

THE AMENDMENT BILL AND THE OBJECTORS.

Sir,

I should think the majority of the profession are pretty well disgusted at the Address to the Members of the House of Commons published in this week's *Veterinary Record*. The question is "Is the R.C.V.S. really in need of money"? And the answer is undoubtedly "Yes," or else those whom we have placed in the position to manage the financial business at Red Lion Square would not proclaim the fact in such a bare-faced manner, backed up by the evidence of accounts.

We know there is about £8,000 invested reserve belonging to the College—the investment is, I believe, mostly in Consols. Will the five gentlemen whose names figure at the foot of the address referred to, tell me if the income derived from these, or any other "gilt-edged" securities, at the present moment is abnormally great? Or do they suggest selling them for nothing.

Presuming that it *is* possible to be more economical in dealing with this interest, and we can thereby save a little year by year, we shall eventually arrive at the cheese-paring stage when we shall live—or attempt to live on "a bean a day"—and collapse. As to the suggestion of increasing the examination fees, this is positively out of the question, they are already high enough. The number of students entering the colleges is getting markedly less every year, and this would assuredly be killing the "geese that laid the golden eggs," and in my opinion, a despicably mean way of raising the wind.

If new members only were to pay an annual registration fee, how many years would it be before this infinitesimal increase would be felt, presuming that about thirty or forty men qualify every year. And if this annual fee was imposed, would it not be necessary to give four years notice, so that present students also should not be imposed upon? Why will these, otherwise clever men, blind themselves to facts? Money *is* needed, though I think half-a guinea a year fee should suffice, and although we *did* expect that *one* guinea for registration would be all we should be asked to pay, let us stick together, observing our motto "Vis unita fortior," and not try to take advantage of what may be a legal technicality.

I am surprised to see it stated that no member of any other profession is called upon to make an annual contribution. What about lawyers? Do these five gentlemen know what the members of the legal profession pay a year? They should find out at once, they will get a surprise. In conclusion, let us aim at *con*struction not *de*struction, and f any member has any better suggestion to make *re* raising money than that proposed in the "Amended Bill," let him make it.

Yours sincerely,

J. P. Isherwood.

Veterinary Societies—Addresses.

ASSOCIATION OF VETERINARY OFFICERS OF HEALTH
Pres: Mr. William Robb, F.R.C.V.S., Glasgow.
Hon. Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S., Moore Street, Abattoir, Glasgow

BORDER COUNTIES V.M.S.
Pres: Mr. J. W. Hewson, M.R.C.V.S., Wigton
Hon. Sec. (pro tem.): Mr. F. W. Garnett, M.R.C.V.S., Dalegarth, Windermere
Meetings, Second Friday of Feb., June, and October

CAPE OF GOOD HOPE V.M.S.
Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town
Hon. Sec. & Treas. Mr. R. W. Paine, F.R.C.V.S.

CENTRAL V.S.
Pres. Mr. W. S. Mulvey, F.R.C.V.S., Skansen, Baddow Road, Chelmsford
Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S., 122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August and September, 10 Red Lion Square, Holborn, at 7 p.m.

CENTRAL CANADA V.A.
Hon. Sec: Mr. A. E, James, Ottawa

CENTRAL V.A. OF IRELAND.
Pres: Mr. J. F. Healey, M.R.C.V.S., Midleton
Hon. Sec. Mr. E. C. Winter, F.R.C.V.S., Queen st., Limerick
Treas: Mr. P. J. Howard, M.R.C.V.S., Ennis

EASTERN COUNTIES V.M.A.
Pres: Mr. T. G. Hentley, M.R.C.V.S., Woodbridge
Hon. Sec. & Treas: Mr. Sidney Smith, Junr., M.R.C.V.S. 37 High Street, Lowestoft
Meetings, Second Tuesday, Feb., July and Sept.

GLASGOW V.M.S.
Pres. Principal McCall.
Hon. Sec. Mr. J. Gibson, 16 Overdale Gdns, Langside, Glas.

VET. MED. ASSN. OF IRELAND.
Pres: Prin. A. E. Mettam, M.R.C.V.S., R.V. Coll., Dublin
Hon. Sec: Mr. A. Watson, M.R.C.V.S., Municipal Buildings, Cork Hill, Dublin
Hon. Treas: Prof. Craig, M.A., Royal Vety. Coll., Dublin.

LANCASHIRE V.M.A.
Pres: Mr. J. W. Brittlebank, M.R.C.V.S., Town Hall, Manchester
Hon. Treas: Mr. W. Packman, M.R.C.V.S., Bury, Lancs.
Hon. Sec. Mr. G. H. Locke, M.R.C.V.S., Grosvenor-street, Manchester
Meetings, 1st Thursday in April, June, Sept., & Dec.

LINCOLNSHIRE V.M.S.
Pres. Mr. W. W. Grasby, M.R.C.V.S., Daventry
Hon. Sec: & *Treas*: Mr. C. W. Townsend, F.R.C.V.S., Long Stanton, Cambridge
Meetings, Second Thursday Feb., June, and October

LIVERPOOL UNIVERSITY V.M.S.
Pres: Mr. J. T. Share-Jones, F.R.C.V.S., University, L'pool.
Hon. Secs: Prof. H. E. Annett, The University.
Arnold Richardson, M.R.C.V.S., 111 Arundel Avenue, Liverpool
Meetings, May, July, October, January.

VET. ASSN. OF MANITOBA.
Pres: Dr. W. A Dunbar, Winnipeg
Hon. Sec. & Treas: Dr. F. Torrance, Winnipeg

MIDLAND COUNTIES V.M.A.
Pres: Mr. H. L. Pemberton, M.R.C.V.S., Bridgnorth
Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S., Camden House, High-st., West Bromwich
Meetings, Second Tuesday, Wednesday, Thursday, and Friday alternately in Feb., May, Aug. and Nov.

NATAL VETERINARY MEDICAL ASSOCIATION.
Pres. Mr. H. Watkins Pitchford, Govt. Bacteriologist, Pietermaritzburg
Hon. Sec. & Treas. Mr. J. B. Collyer, Vety. Inspector Natal Police, Pietermaritzburg

NATIONAL VET. ASSOCIATION.
Pres: Mr. T. Salusbury Price. M.R.C.V.S. 30 Brixton Hill, S.W.
Sec: Mr. William Hunting, F.R.C.V.S. London, S.W.
Treas: Prof. G. H. Wooldridge, F.R.C.V.S., Ryl. Vet. Coll., Camden Town, N.W.

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.
Pres: Mr. W. A. Taylor, F.R.C.V.S., Brick-st, Manchester
Treas: Mr. J. B. Wolstenholme, F.R.C.V.S., Quay-street, Manchester
Hon. Sec: Mr. G. H. Locke, M.R.C.V.S. Grosvenor Street, Oxford-st., Manchester

NORTH OF ENGLAND V.M.A.
Pres: Mr. E. R. Gibson, M.R.C.V.S. 27 Marlborough-street, Seaham Harbour
Hon. Sec: T. T. Jack, M.R.C.V.S., 3 Elmwood Ter, Sunderland
Meetings, Third Friday, Feb., May, Aug. and Nov.

NORTH OF IRELAND V.M.A.
Pres: Mr. F. W. Emery, F.R.C.V.S., Belfast
Hon. Sec; Mr. J. S. A. Jordan, M.R.C.V.S., Belfast
Hon. Treas: Mr. J. A. Thompson, F.R.C.V.S., Lurgan

NORTH OF SCOTLAND V.M.S.
Pres: Vet. Capt. Clement Baxter, M.R.C.V.S., Elgin
Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S. Alford, Aberdeen
Meetings, Last Saturday in January and August

NORTH WALES V.M.A.
Pres: Mr. R. S. Rowlands, M.R.C.V.S., Abergele
Hon. Sec. Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Hon. Treas. Mr. R Jones, M.R.C.V.S., Towyn, Merionethshire
Meetings, First Tuesday, March and September

ONTARIO V.A.
Pres: Mr. J. H. Tennent, V.S., London, Ontario
Sec: & *Treas*: Mr. C. H. Sweetapple, V.S., Toronto, Ontario

ROYAL COUNTIES V.M.A.
Pres: Mr. E. J. Mellett, M.R.C.V.S., Henley on-Thames
Hon. Sec. & Treas: Mr. G. P. Male, M.R.C.V.S., Reading
Meetings, Last Friday, Jan., April, July and Nov.

ROYAL SCOTTISH V.S.
Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.

ROYAL VETERINARY COLLEGE M.A.
Pres: Dr. Lander, D.Sc.
Hon. Sec: Mr. B. Gorton, M.R.C.V.S.
Assist. H.S. Mr. T. J. Davis.

SCOTTISH METROPOLITAN V.M.S.
Pres: Mr. James Peddie, F.R.C.V.S., Dundee
Hon. Sec: Mr. A. Gofton, M.R.C.V.S., Ryl. Dick Vet. Coll.

SOUTHERN COUNTIES V.S.
Pres: Mr. W. Hunting, F.R.C.V.S., London
Hon. Sec: Mr. J. Alex. Todd, M.R.C.V.S., Worthing
Hon. Treas: Mr. E. W. Baker, M.R.C.V.S., Wimborne
Meetings, Last Thursday, Mar., June and Sept.

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.
Pres.: Mr. G. R. Dudgeon, M.R.C.V.S., Sunderland
Hon. Sec: Mr. W. Awde, F.R.C.V.S., Stockton-on-Tees.
Meetings, First Friday, Mar., June, Sept. and Dec.

TRANSVAAL V.M.A.
Pres: Dr. Theiler, C.M.G.
Hon. Treas: Mr. J. M. Christy, M.R.C.V.S., D.V.S. Krugersdorp
Hon. Sec: Mr. J. G. Bush, M.R.C.V.S., Piet Retief, Transvaal

VICTORIA VETERINARY BENEVOLENT FUND.
Pres. Mr. E. Coleman, Crofton, Tooting Graveney
Hon. Sec. & Treas: W. Freeman Barrett, Esq. Fountain Court, Temple, E.C.

WESTERN COUNTIES V.M.A.
Pres: Mr. H. E. Whitemore, M.R.C.V.S., Langport
Hon. Sec. Mr. W. Ascott, M.R.C.V.S., Bideford
Hon. Treas: Mr. P. G. Bond, M.R.C.V.S., Plymouth
Meetings, Third Thursday, March, July and November

WEST OF SCOTLAND V.M.A.
Pres: Mr. Hugh Begg, M.R.C.V.S., East Kilbride
Hon. Sec: & *Treasr*: Robert Mitchell, M.R.C.V.S., 1291 Argyll Street, Sandyford
Meetings, Second Wednesday, May, Oct. and January.

YORKSHIRE VET. ASSOCIATION
Pres: Mr. J. W. Lazenby, M.R.C.V.S., Tadcaster
Hon. Sec; Mr. J Clarkson, M.R.C.V.S., Garforth, nr. Leeds
Hon. Treas: Mr. A. McCarmick, M.R.C.V.S., Kirkstall-road, Leeds

END OF VOLUME XXIII.